AFM
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ARBORIST REPORT
For
11406 NE 112th Street
Kirkland, WA

October 13th, 2014
Updated May 6, 2016

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Appendix

1. Introduction

American Forest Management, Inc. was contacted by Larry Scrivanich, and was asked to compile an 'Arborist Report' for one parcel located within the City of Kirkland, WA.

The proposed development encompasses the property located at 11406 NE 112th St. Our assignment is to prepare a written report on present tree conditions, which is to be filed with the short plat permit application.

This report encompasses all of the criteria set forth under the City of Kirkland's tree regulations. The required minimum tree density for the entire area (75,794 sq. ft. or 1.74 acres) is 52 tree credits.

Date of Field Examination: August 14th, 2014

2. Description

The topography of the subject property is relatively flat. A small wetland exists off of the northeast property corner. 92 significant trees were located and assessed on the property. A significant tree in the City of Kirkland is defined as having a diameter 6" or greater at DBH (diameter at breast height, 4 ½' above ground).

The neighboring trees (with drip-lines impacting the subject parcel) were also assessed and are part of this report.

All of the significant trees on the subject property have been identified in the field with a numbered aluminum tag attached to the lower trunk. Tree tag numbers correspond with tree numbers on the attached tree summary tables and copy of the tree survey.

3. Methodology

Each tree in this report was visited. Tree diameters were measured by tape. The tree heights were measured using a Spiegel Relaskop. Each tree was visually examined for defects and vigor. The tree assessment procedure involves the examination of many factors:

- The crown of the tree is examined for current vigor. This is comprised of inspecting the crown (foliage, buds and branches) for color, density, form, and annual shoot growth, limb dieback and disease. The percentage of live crown is estimated for coniferous species only and scored appropriately.

- The bole or main stem of the tree is inspected for decay, which includes cavities, wounds, fruiting bodies of decay (conks or mushrooms), seams, insects, bleeding, callus development, broken or dead tops, structural defects and unnatural leans. Structural defects include crooks, forks with V-shaped crotches, multiple attachments, and excessive sweep.

- The root collar and roots are inspected for the presence of decay, insects and/or damage, as well as if they have been injured, undermined or exposed, or original grade has been altered.

Based on these factors a determination of viability is made. Trees considered 'non-viable' are trees that are in poor condition due to disease, extensive decay and/or cumulative structural defects, which exacerbate failure potential. A 'viable' tree is a tree found to be in good health, in a sound condition with minimal defects and is suitable for its location. Also, it will be wind firm if isolated or left as part of a grouping or grove of trees. A 'borderline' viable tree is a tree where its viability is in question. These are trees that are beginning to display symptoms of decline due to age, species related problems and/or man caused problems. Borderline trees are not expected to positively contribute to the landscape for the long-term and are not recommended for retention.

4. Observations

The subject trees are comprised of a mix of native and ornamental species. Native species are most dominant and comprised of Douglas-fir, bitter cherry, big leaf maple, western red cedar and black cottonwood. The mix of ornamental species includes a row of Atlas cedar on the east property line, a Norway maple, a couple European white birches, a large tulip tree, a mature silver maple and a sourwood tree.

The Douglas-fir is in fair to good condition overall. A few are considered borderline viable. Tree #123 has a broken out top and significant internal trunk decay. Tree #129 is infected with *Schweinitizii* root and butt rot, evidenced by the presence of the fungal fruiting bodies of the disease near the base of the tree. Tree #123 is also suspected of being infected although positive diagnosis could not be made. Tree #142 is also considered borderline viable. This tree has a broken top, advanced trunk decay and a major crook of the lower trunk. On Tree #161, substantial lower trunk decay is suspected given the advanced swelling of the lower trunk. *Schweinitizii* root and butt rot is suspected although positive diagnosis could not be made. Tree #182 is in fair to poor condition. It has a stunted top and indications of advanced decay in the lower trunk.

A small wetland exists in the northeast corner of the property. Tree composition in the wetland is primarily black cottonwood. Trees are semi-mature to mature and in fair condition. Tree #119 is a smaller suppressed cottonwood with a moderate decay column. Retention is not recommended.

The bitter cherry has developed typical structure. Many trees have poor trunk taper and leans. Tree #154 is in decline and considered borderline viable, evidenced by a thin top and obvious lack of vigor. Tree #179 has developed poor structure and has a high potential for failure. Tree #192 is non-viable, recently dead.

Tree #133, one of the European white birch is over-mature and in natural decline. This is evidenced by advanced top decline. It is considered borderline viable and not recommended for retention.

Tree #165, a young sourwood tree is in fair to poor condition and considered borderline viable. This tree has developed very poor form due to suppression by adjacent trees.

Tree #170 is a mature silver maple, made up of multiple upright large scaffold leaders. It has a very large spreading crown. Many of the stems are poorly attached to the lower trunk/root crown. The build-up of included or embedded bark between the stems is concerning. The subject is considered borderline viable due to a high potential for stem failure. Retention is not recommended.

Neighboring Trees

There are no neighboring tree issues on the east perimeter.

There are several Douglas-fir trees on the adjacent properties to the west. Many have drip-lines that encroach upon the subject property. These appear fairly healthy and of good vigor. Farther off of the property line, a root rot pocket was observed on the property to the west, at the back of the subject property. Further investigation is recommended prior to occupancy to determine if there are any root diseased infected trees within reach of new targets.

5. Discussion

The extent of drip-lines (farthest reaching branches) for trees potentially impacted by development can be found in the tree summary tables at the back of this report. These have also been delineated on a copy of the site plan. The recommended Limits of Disturbance for viable trees potentially impacted by construction can be found on the tree summary tables. The information plotted on the attached site plan needs to be transferred to a final tree retention/protection plan to meet City submittal requirements. The Limits of Disturbance information shall be used in the development of such plan. The trees that are to be removed shall be shown "X'd" out on the final plan. Trees to be retained outside the critical areas shall include the Limits of Disturbance line and tree protection fencing locations. Tree protection fencing shall be initially positioned just beyond the drip-line and only moved back to the Limits of Disturbance line when work is authorized.

The Limits of Disturbance measurements for the neighboring trees can also be found in the tables. Tree protection fencing shall be initially positioned at the drip-line, and only moved to allow work up to the Limits of Disturbance. No work shall be allowed within the recommended Limits of Disturbance as listed in the tables.

It appears the existing access to the site will be used as the main access into the plat. The access road is in good condition. Access improvements are not expected to have any adverse impacts on adjacent neighboring trees. No significant trees exist within a close proximity to the access easement edge.

Neighboring trees #507 and #508 are not correctly located on the plan. These are situated farther off the property line than shown. Impacts will be outside of drip-line areas and recommended limits of disturbance.

Neighboring trees #136 through #144 will be impacted to some degree by the proposal. Impacts are not expected to be consequential to long-term health or stability. The project arborist shall be on-site to monitor any soil excavations taking place within a close proximity of neighboring trees.

6. Tree Protection Measures

The following guidelines are recommended to ensure that the designated space set aside for the preserved trees are protected and construction impacts are kept to a minimum. Standards have been set forth under Kirkland Zoning Code 95.34 of Chapter 95. Please review these standards prior to any development activity.

1. Tree protection fencing shall be erected per prior to moving any heavy equipment on site. Doing this will set clearing limits and avoid compaction of soils within root zones of retained trees.
2. Excavation limits should be laid out in paint on the ground to avoid over excavating.
3. Excavations within the drip-lines of retained trees shall be monitored by a qualified tree professional so necessary precautions can be taken to decrease impacts to tree parts. A qualified tree professional shall monitor excavations when work is required and allowed up to the "limits of disturbance".
4. To establish sub grade for foundations, curbs and pavement sections near the trees, soil should be removed parallel to the roots and not at 90 degree angles to avoid breaking and tearing roots that lead back to the trunk within the drip-line. Any roots damaged during these excavations should be exposed to sound tissue and cut cleanly with a saw. Cutting tools should be sterilized with alcohol.
5. Areas excavated within the drip-line of retained trees should be thoroughly irrigated weekly during dry periods.
6. Preparations for final landscaping shall be accomplished by hand within the drip-lines of retained trees. Large equipment shall be kept outside of the tree protection zones.

7. Tree Replacement

Tree density requirements will likely be satisfied by tree retention within the wetland, wetland buffer and in the site's landscape perimeters.

New tree plantings may be preferred to enhance final landscaping. New tree plantings shall be given appropriate space for the species and their growing characteristics. Refer to the *Kirkland Plant List* on the City's website for a list of desirable species. For planting and maintenance specifications, refer to chapters 95.50 and 51 of the Kirkland Zoning Code.

If supplemental trees are required as part of the proposal, consider enhancing the wetland and buffer area, by the establishment of native coniferous species – western red cedar and Sitka spruce; and by removing the invasive plant species.

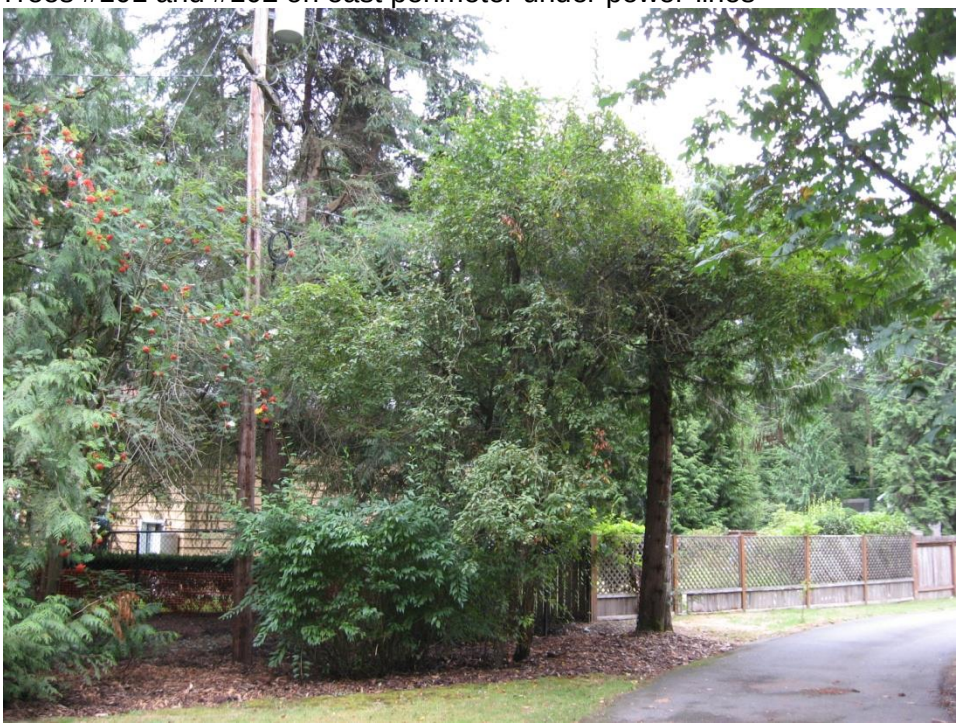
There is no warranty suggested for any of the trees subject to this report. Weather, latent tree conditions, and future man-caused activities could cause physiologic changes and deteriorating tree condition. Over time, deteriorating tree conditions may appear and there may be conditions, which are not now visible which, could cause tree failure. This report or the verbal comments made at the site in no way warrant the structural stability or long term condition of any tree, but represent my opinion based on the observations made. Nearly all trees in any condition standing within reach of improvements or human use areas represent hazards that could lead to damage or injury.

Please call if you have any questions or if we can be of further assistance.

Sincerely,

Bob Layton
ISA Certified Arborist #PN-2714A
ISA Tree Risk Assessment Qualified

Trees #101 and #102 on east perimeter under power-lines



Row of planted Atlas cedar on east perimeter

East perimeter

Northeast portion of property, neighboring cottonwood trees

North portion

Northwest portion

Northwest perimeter, tulip tree in front

Southwest perimeter

Southwest corner, neighboring trees

Property overview

City of Kirkland - Tree Protection Standards

1. Tree Protection Fencing shall be erected at prescribed distance per arborist report. Fences shall be constructed of chain link and be at least 4 feet high.
2. Install highly visible signs on protection fencing spaced no further than 15 feet apart. Signs shall state “Tree Protection Area-Entrance Prohibited”, and “City of Kirkland” code enforcement phone number.
3. No work shall be performed within protection fencing unless approved by Planning Official. In such cases, activities will be approved and supervised by a “Qualified Professional”.
4. The original grade shall not be elevated or reduced within protection fencing without the Planning Official authorization based on recommendations from a qualified professional.
5. No building materials, spoils, chemicals or substances of any kind will be permitted within protection fencing.
6. Protection Fencing shall be maintained until the Planning Official authorizes its removal.
7. Ensure that any approved landscaping within the protected zone subsequent to the approved removal of protection fencing be performed with hand labor.

In addition to the above, the Planning Official may require the following:

a. If equipment is authorized to operate within the root zone, the area will be mulched to a depth of 6” or covered with plywood or similar material to protect roots from damage caused by heavy equipment.
b. Minimize root damage by excavating a 2-foot deep trench, at edge of protection fencing to cleanly sever the roots of protected trees.
c. Corrective pruning to avoid damage from machinery or building activity.
d. Maintenance of trees throughout construction period by watering and fertilization.

Tree Density Calculation

Property Size – +/- 75,794 sq. ft.
75,794/43,560 X 30 = 52.2
Required Minimum Tree Density = 52 tree credits
Viable Tree Credits Existing = 429